Assignment 01

Construction of OLAP Cube through Power Pivot in Excel

- **Total Marks: 3%**
- This assignment must be completed in teams of 2 or otherwise, individually.
- Only one member should submit.
- The file names should follow the following format: **Name1(ERP1)_Name2(ERP2)**
- **Deadline:** Sunday, 2nd March, 2025 @11.55pm

Objective

The main goal of this assignment is to use data warehousing/OLAP technology and your analytical skills to solve a set of business problems using Power Pivot in MS Excel. The main output required is the set of valuable insights from the data which you will acquire through a drill-down process for each business problem.

Plagiarism Note

In case of potential plagiarism in dimensional queries, copying of entire file or any other indication of plagiarized submission, both teams involved will receive a zero in this assignment.

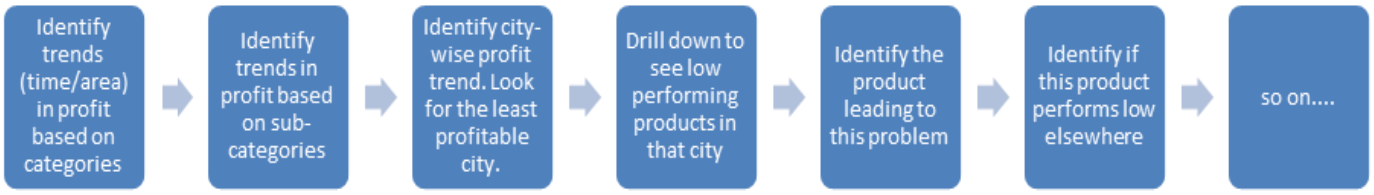
Grading Rubric

The number and business importance of the identified business problem (at least 2 are required)	0.75%
The process of drill-down you adopted for each problem – this must be shown as a process diagram (see example below)	1.5%
The actual insights you extracted which solve/partially solve/help solve the business problem	0.75%
Total	**3%**

Task

1. Select a dataset of your choice from the provided list at the end of this document.
2. Study the columns thoroughly in the selected dataset. You may do your research to understand the data better.
3. Create at least 2 problems that are the starting point of your OLAP analyses of the selected data. For instance:
    a. Cost Analysis of Sales
    b. Profit Analysis of Sales
    c. Or even something as general as "Customer Analysis" (if you think there is only comprehensive problem in the data, then justify in your report)
4. Create a Word document where you will **report** your findings (fill it as specified below).
5. Identify the facts, dimensions, and useless variables.
6. For each problem, create a **process diagram** which explains your drill-down process of solving this problem (NB: drill-down is an essential step in BI to solve a problem). You may make use of MS Word's SmartArt Feature or any tool of your choice.
   Since this diagram is the path to the solution, it carries most marks.

Example of the Drill-Down process:



7. Additionally, think in terms of business recommendations and make a note about it. That note should be directed to the key decision makers of the company who will get a summarized view of the problem and recommended solution.
   (*You may be required to do some research on your end to understand the business dynamics)*

Submission Requirements

- Only one member should submit.
- The file names should follow the following format: **Name1(ERP1)_Name2(ERP2)**

Required Files:

1. Submit your MS Excel workbook consisting of all your work.
2. Submit your MS Word document with:
   - Selected dataset (with 1-2 sentences of brief description)
   - List the facts, dimensions, and useless variables (no explanation needed – only list)
   - Set of identified problems (brief; 1-2 sentences / problem)
   - Process diagram for each problem (as shown above)
   - Set of charts generated for each problem (Copy Charts from Excel) with one liner insights.
   - Final set of insights for each problem and potential recommendations
   - Disclosure of use of AI/Other resources

List of Datasets

Bike Sales	https://www.kaggle.com/datasets/sadiqshah/bike-sales-in-europe
US Candy Sales	https://www.kaggle.com/datasets/jatinsareen02/us-candy-distributor?select=Candy_Sales.csv
UK train rides	https://www.kaggle.com/datasets/helddata/uk-train-rides-maven-rail-challenge
Barcelona Accidents	https://media.geeksforgeeks.org/wp-content/uploads/20240524131021/accidents_2017.csv
Chatgpt-Twitter	https://www.kaggle.com/datasets/tariqsays/chatgpt-twitter-dataset
Job Placement	https://www.kaggle.com/datasets/ahsan81/job-placement-dataset
Tech Salaries	https://www.kaggle.com/datasets/thedevastator/know-your-worth-tech-salaries-in-2016
E-commerce Shipping Data	https://www.kaggle.com/datasets/prachi13/customer-analytics